

**INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

|   |   |   |  |
|---|---|---|--|
| 1. Name and Address of Reporting Person*<br>MARXE AUSTIN W &<br>GREENHOUSE DAVID M<br><br>(Last) (First) (Middle)<br>C/O SPECIAL SITUATIONS<br>FUNDS, 527 MADISON AVENUE,<br>SUITE 2600<br><br>(Street)<br><br>NEW YORK, NY 10022<br><br>(City) (State) (Zip) | 2. Date of Event Requiring Statement (Month/Day/Year)<br>01/28/2011 | 3. Issuer Name and Ticker or Trading Symbol<br>LIGHTBRIDGE Corp [LTBR]  |  |
|   |   | 4. Relationship of Reporting Person(s) to Issuer<br>(Check all applicable)<br><input type="checkbox"/> Director <input checked="" type="checkbox"/> 10% Owner<br><input type="checkbox"/> Officer (give title below) <input type="checkbox"/> Other (specify below) | 5. If Amendment, Date Original Filed(Month/Day/Year) |
|   |   | 6. Individual or Joint/Group Filing(Check Applicable Line)<br><input checked="" type="checkbox"/> Form filed by One Reporting Person<br><input type="checkbox"/> Form filed by More than One Reporting Person   |  |

**Table I - Non-Derivative Securities Beneficially Owned**

| 1. Title of Security (Instr. 4) | 2. Amount of Securities Beneficially Owned (Instr. 4) | 3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5) | 4. Nature of Indirect Beneficial Ownership (Instr. 5) |
|---------------------------------|---|--|---|
| Common Stock                    | 1,223,392 (1)   | I (1)  | By Limited Partnership (1)                            |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

SEC 1473 (7-02)

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**Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

| 1. Title of Derivative Security (Instr. 4) | 2. Date Exercisable and Expiration Date (Month/Day/Year) |                 | 3. Title and Amount of Securities Underlying Derivative Security (Instr. 4) |                            | 4. Conversion or Exercise Price of Derivative Security | 5. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 5) | 6. Nature of Indirect Beneficial Ownership (Instr. 5) |
|--|--|-----------------|---|----------------------------|--|---|---|
|  | Date Exercisable   | Expiration Date | Title   | Amount or Number of Shares |  |   |   |
| Warrant (2)                                | 01/28/2011   | 07/28/2017      | Common Stock (2)  | 454,546                    | \$ 9   | I (2)   | By Limited Partnership (2)                            |

**Reporting Owners**

| Reporting Owner Name / Address  | Relationships |           |         |       |
|---|---------------|-----------|---------|-------|
|   | Director      | 10% Owner | Officer | Other |
| MARXE AUSTIN W & GREENHOUSE DAVID M<br>C/O SPECIAL SITUATIONS FUNDS<br>527 MADISON AVENUE, SUITE 2600<br>NEW YORK, NY 10022 |               | X         |         |       |

**Signatures**

|                                 |            |
|---------------------------------|------------|
| Austin Marxe                    | 01/28/2011 |
| **Signature of Reporting Person | Date       |
| David Greenhouse                | 01/28/2011 |
| **Signature of Reporting Person | Date       |

**Explanation of Responses:**

\* If the form is filed by more than one reporting person, see Instruction 5(b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations. See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) This is a joint filing by Austin W. Marx (Marx) and David M. Greenhouse (Greenhouse). They share voting and investment control over all securities owned by Special Situations Fund III QP, L.P. (QP), Special Situations Cayman Fund, L.P. (Cayman) and Special Situations Private Equity Fund, L.P. (PE). 764,932 shares of Common Stock are held by QP, 254,977 shares of Common Stock are held by Cayman, 203,983 shares of Common Stock are held by PE. The interest of Marx and Greenhouse in the shares of Common Stock owned by QP, Cayman, PE and DG is limited to the extent of his pecuniary interest.

(2) This is a joint filing by Austin W. Marx (Marx) and David M. Greenhouse (Greenhouse). They share voting and investment control over all securities owned by Special Situations Fund III QP, L.P. (QP), Special Situations Cayman Fund, L.P. (Cayman) and Special Situations Private Equity Fund, LP (PE). 284,091 Warrants are owned by QP, 94,697 Warrants are owned by Cayman and 75,758 Warrants are owned by PE. The interest of Marx and Greenhouse in the shares of Warrants owned by QP, Cayman and PE are limited to the extent of his pecuniary interest.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *See* Instruction 6 for procedure.

Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.